

National Transportation Safety Board  
**Public Hearing**

Air Midwest Flight 5481  
Charlotte, NC  
January 8, 2003



NTSB Boardroom and Conference Center, Washington, DC  
May 20-21, 2003

# Basic Information

- January 8, 2003
- Air Midwest flight 5481
- N233YV
- Charlotte, North Carolina
- 2 Flight Crew and 19 Passengers Fatalities
- Raytheon Beech 1900D

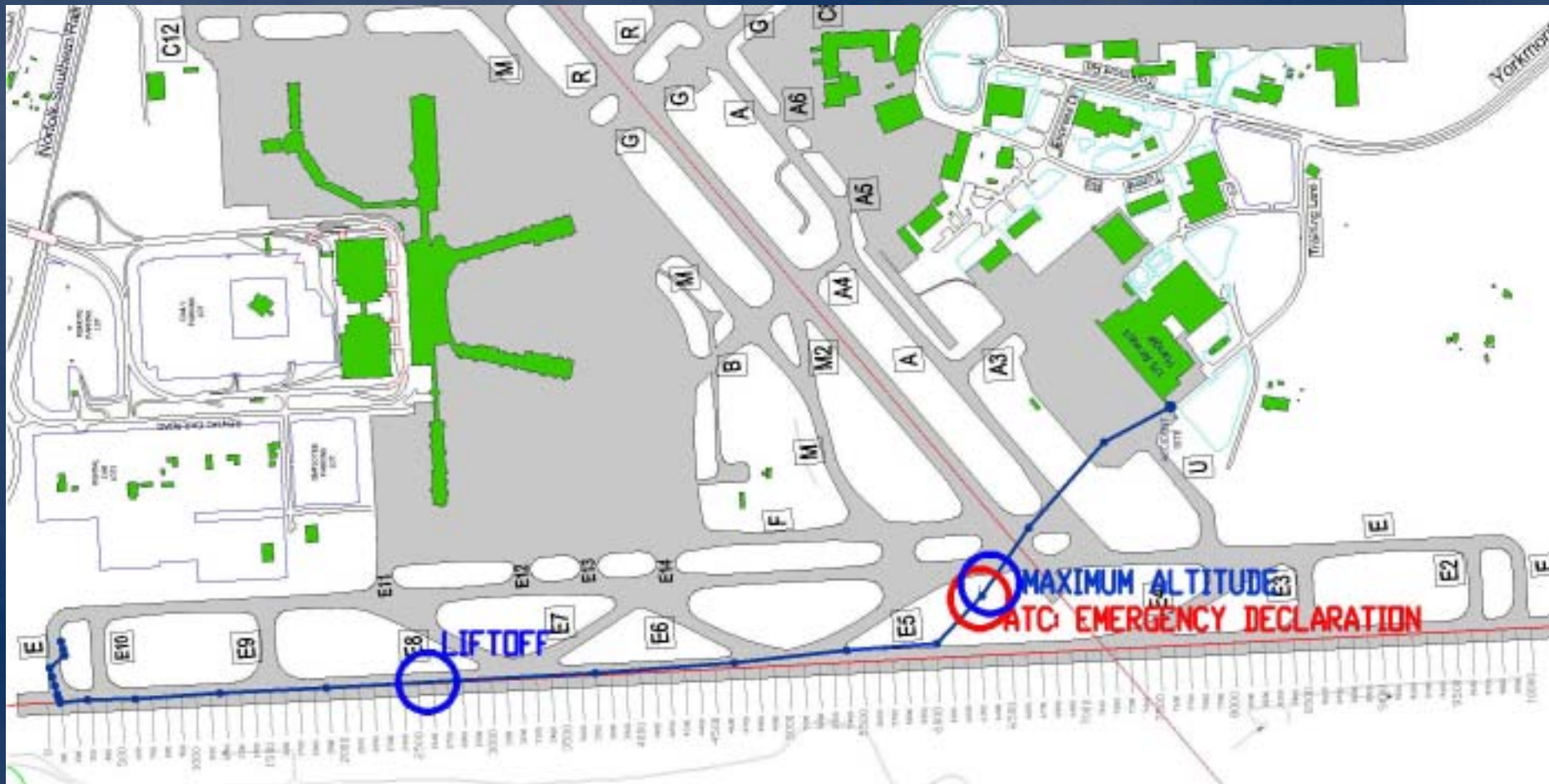


NTSB Public Hearing  
Air Midwest Flight 5481





# CLT Airport Diagram



NTSB Public Hearing  
Air Midwest Flight 5481



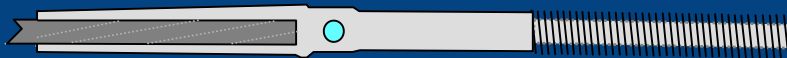
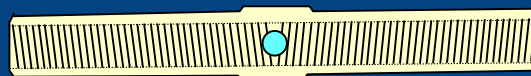
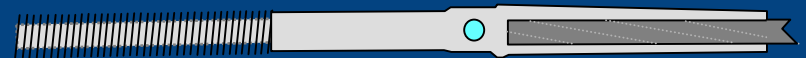
# Pitch Control Turnbuckles Found In Wreckage



7.30 Inches  
Aircraft Nose Down (AND)



5.54 Inches  
Aircraft Nose Up (ANU)



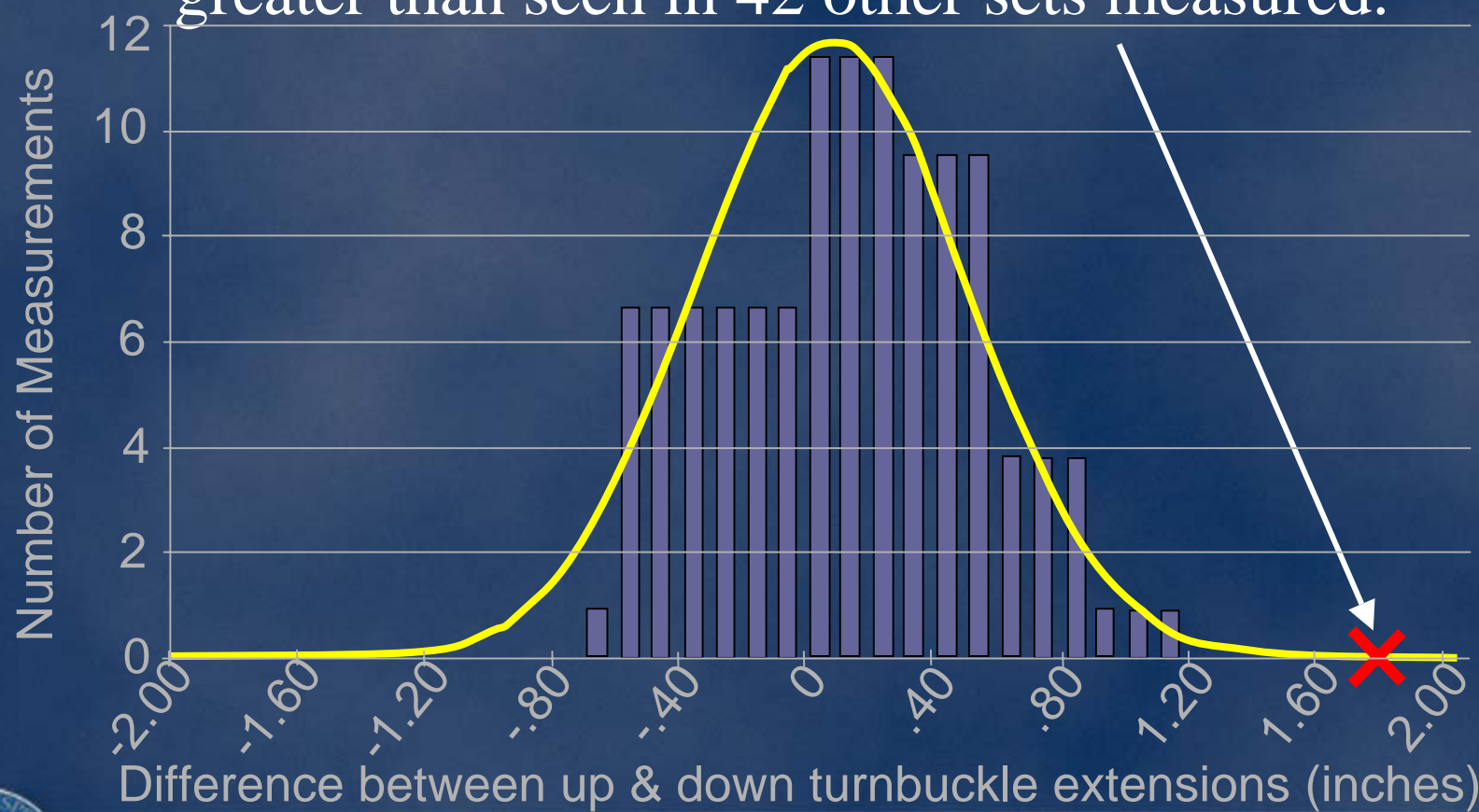
NTSB Public Hearing  
Air Midwest Flight 5481





# Comparison of turnbuckle extensions against those in 42 airplanes

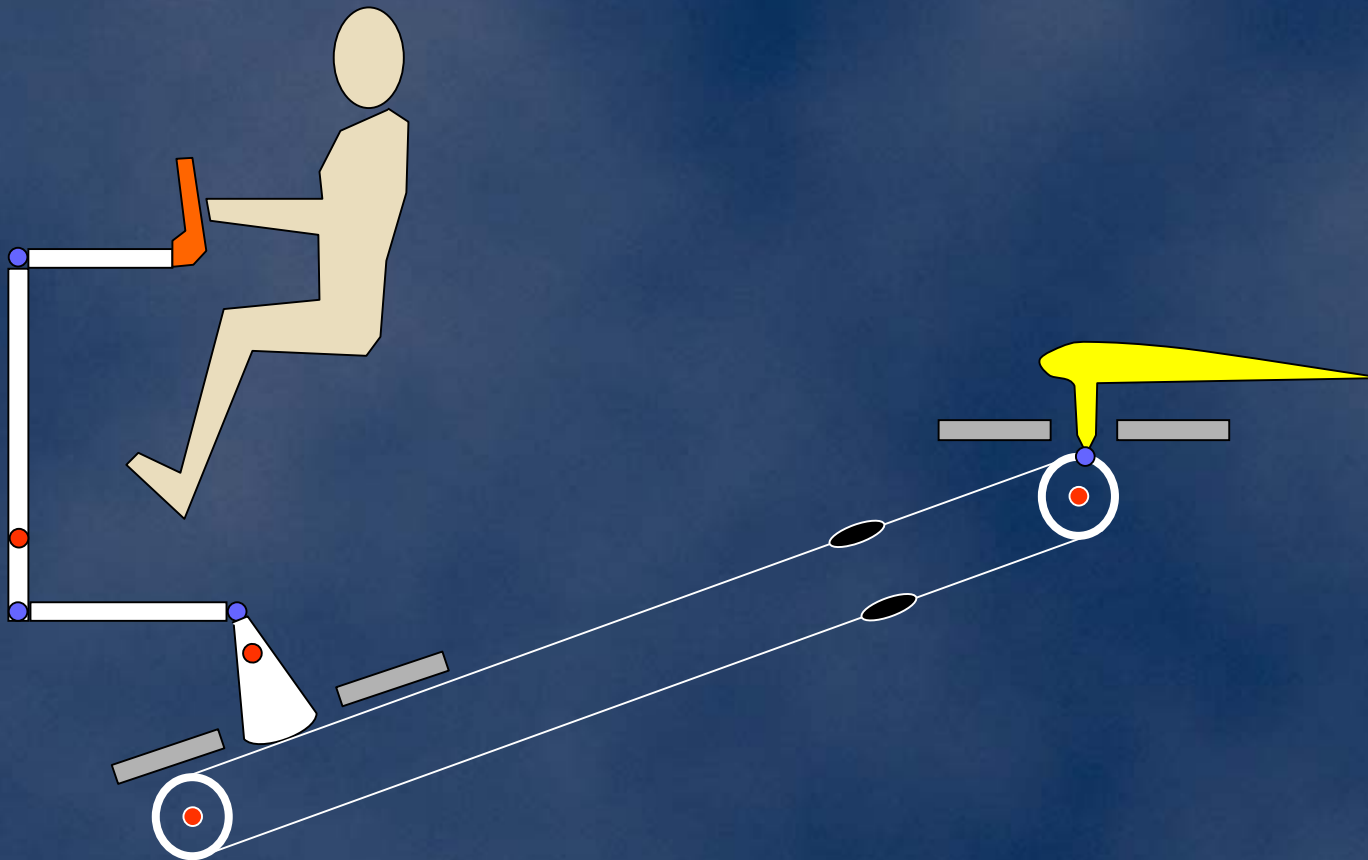
The extensions of the accident airplane turnbuckles were greater than seen in 42 other sets measured.



NTSB Public Hearing  
Air Midwest Flight 5481



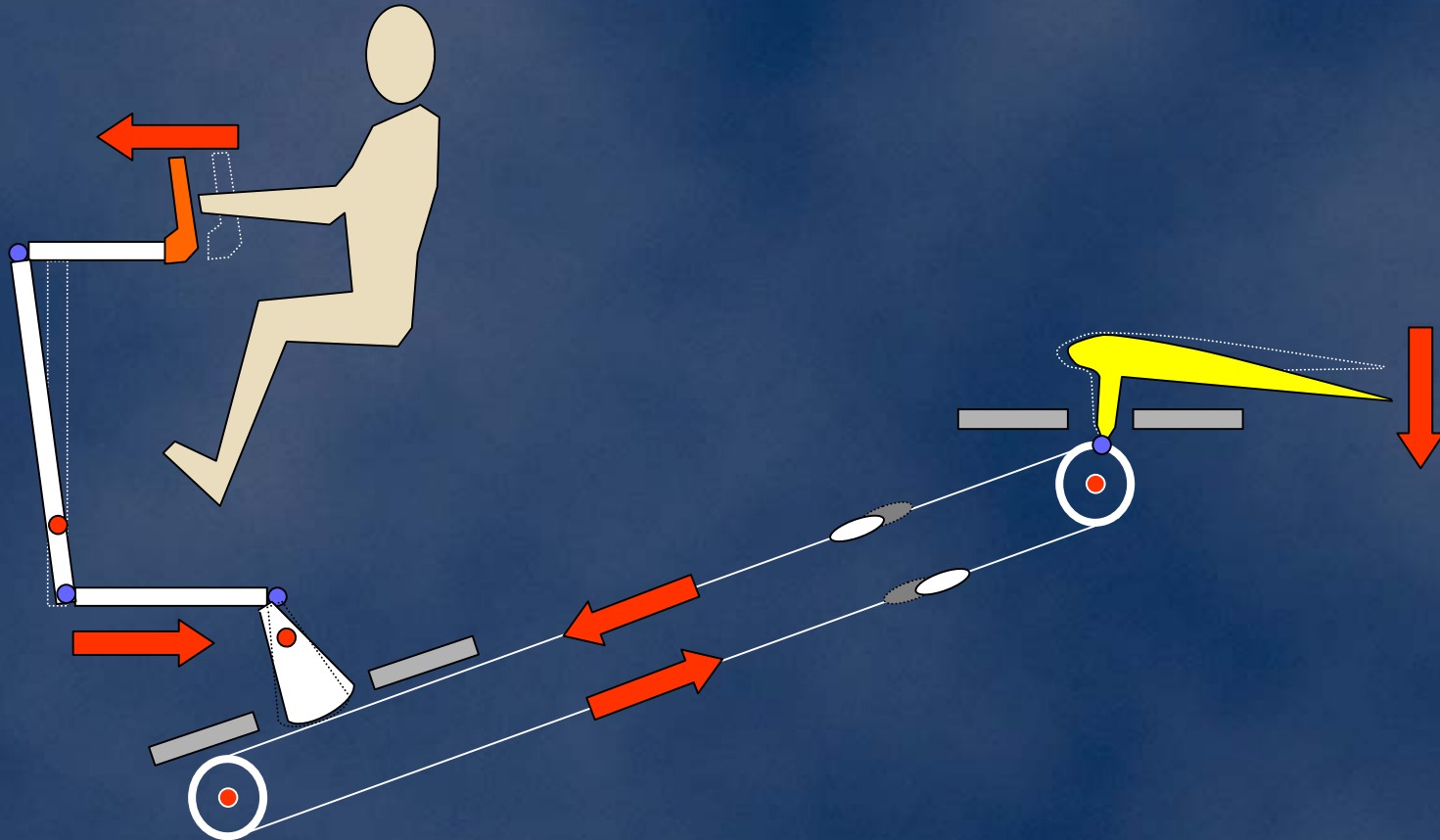
# Elevator Controls - Simplified



NTSB Public Hearing  
Air Midwest Flight 5481



# Simplified Elevator Control (Nose Down Shown)

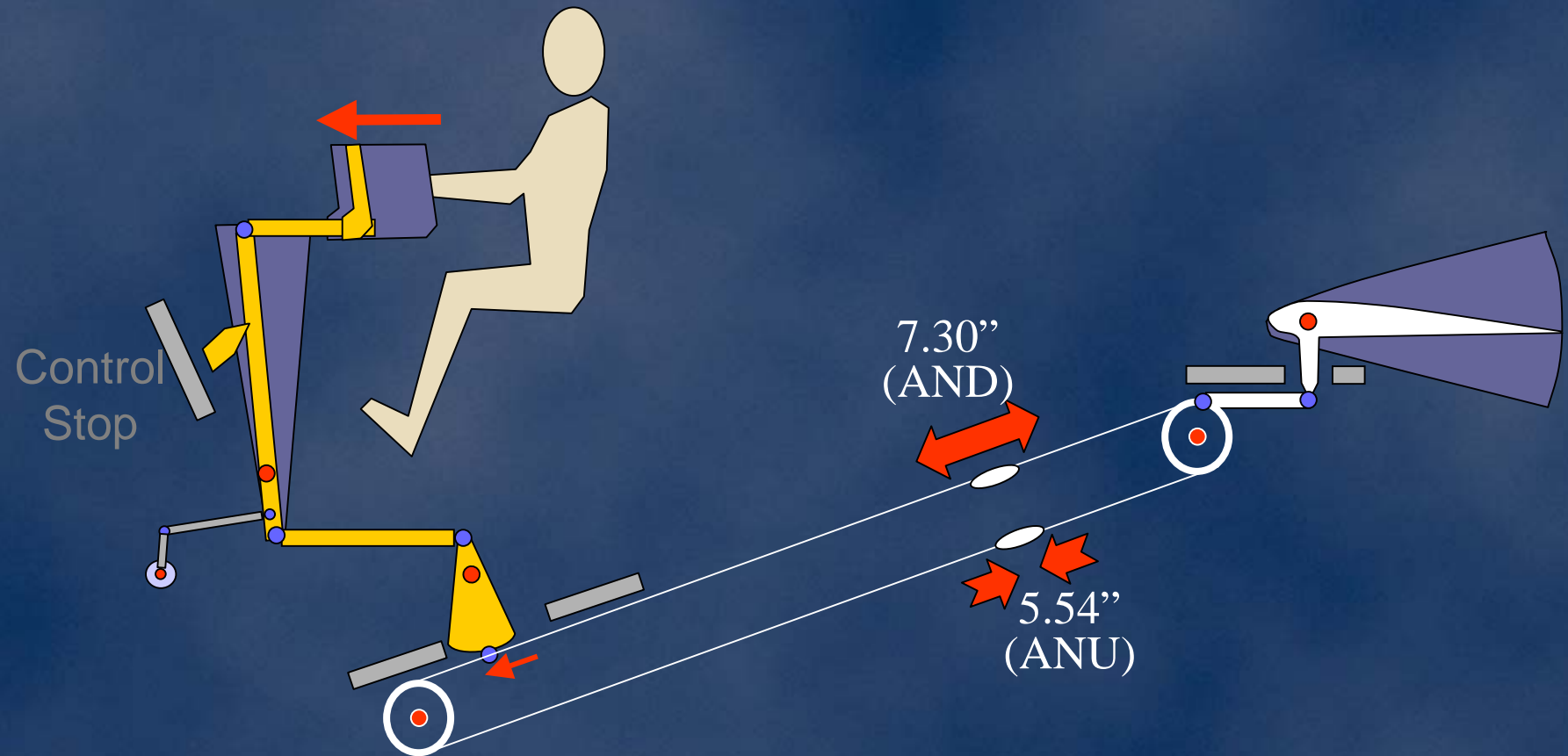


NTSB Public Hearing  
Air Midwest Flight 5481





# Direction of Turnbuckle Adjustment Is Toward Less Downward Capability

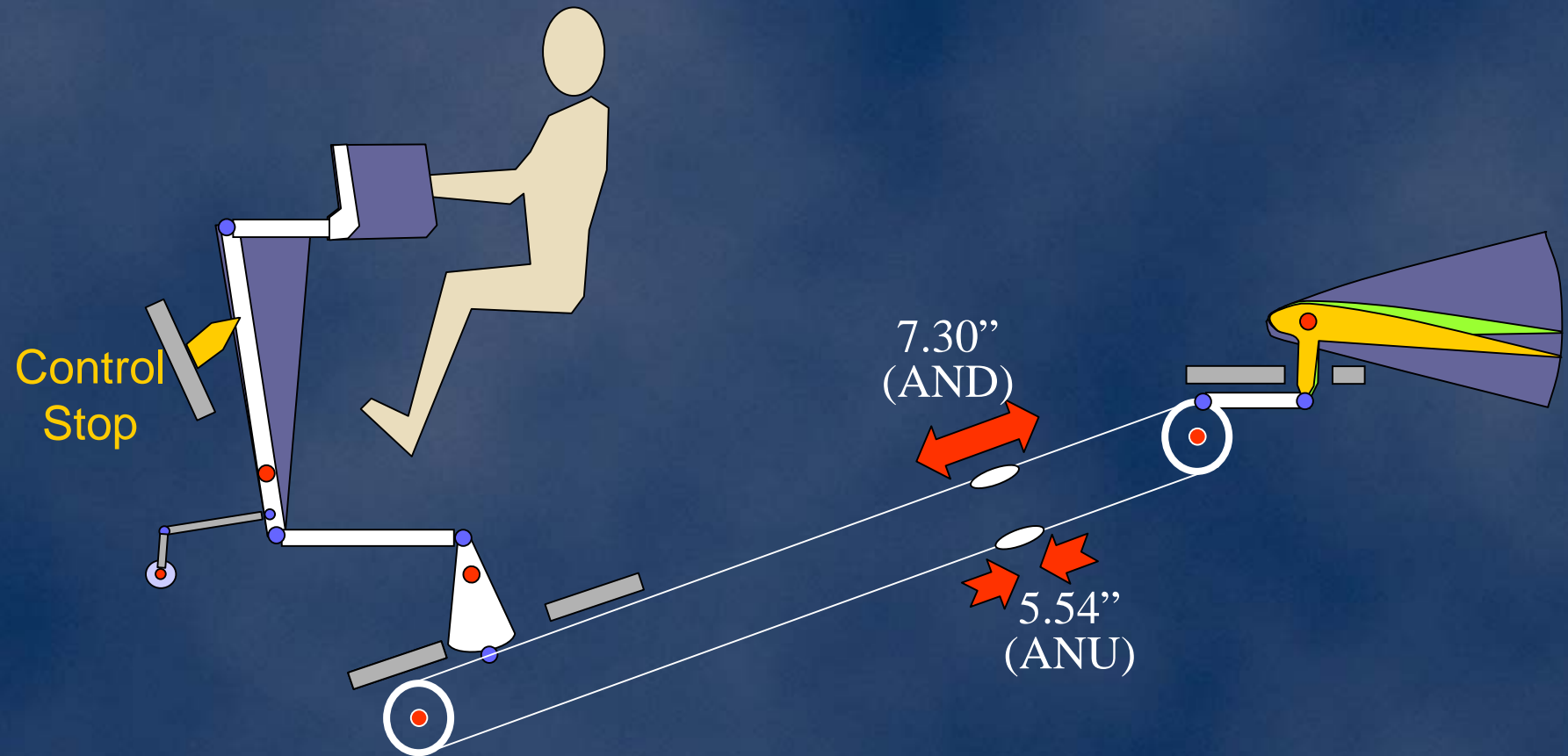


NTSB Public Hearing  
Air Midwest Flight 5481





# Direction of Turnbuckle Adjustment Limits Down Elevator Travel



NTSB Public Hearing  
Air Midwest Flight 5481



# D6 Check

- Began on night of January 6, 2003
- Ended on morning of January 7, 2003
- Air Midwest Facility
- Huntington, West Virginia
- Pitch Control Cables Adjusted

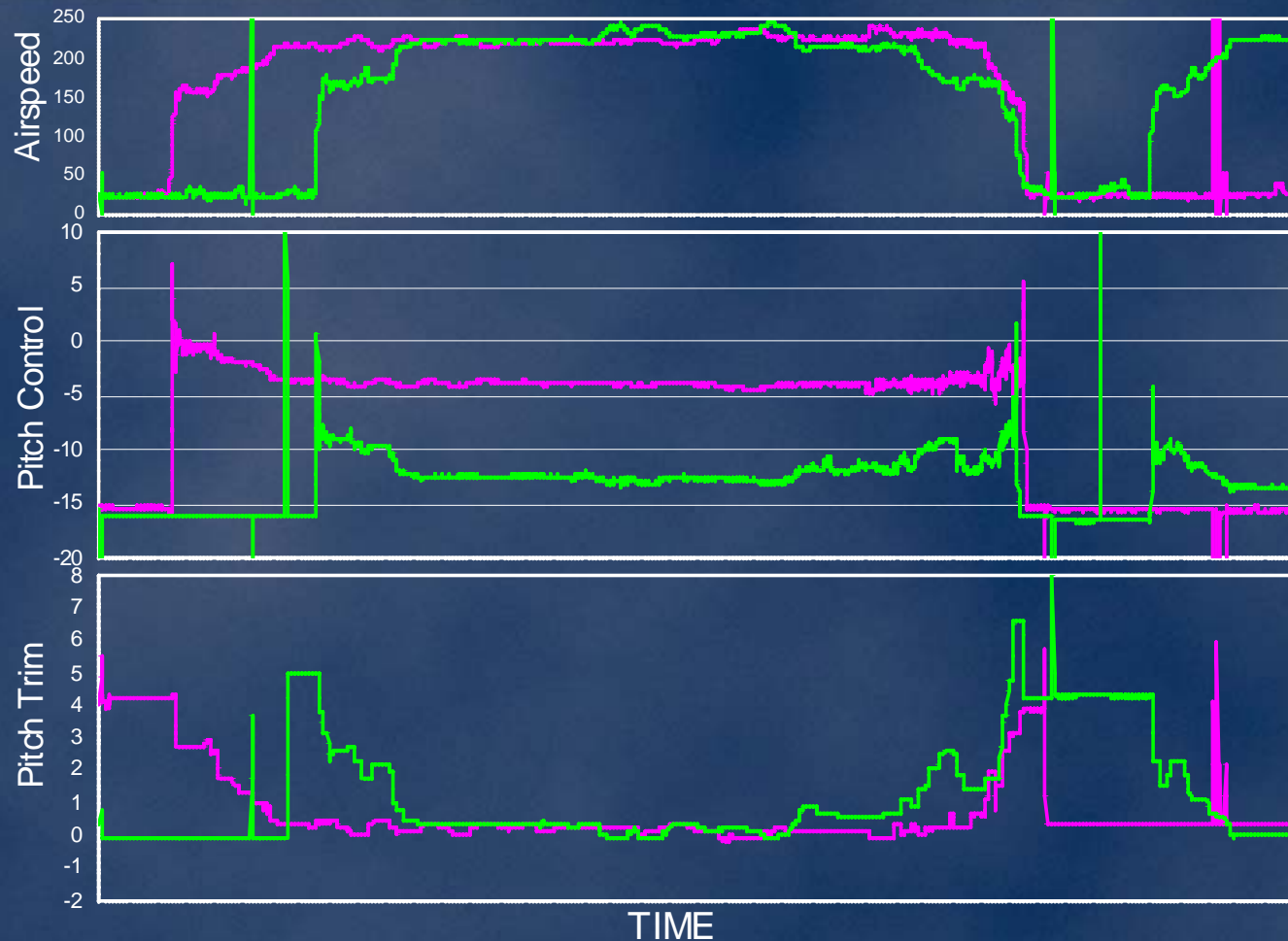


NTSB Public Hearing  
Air Midwest Flight 5481





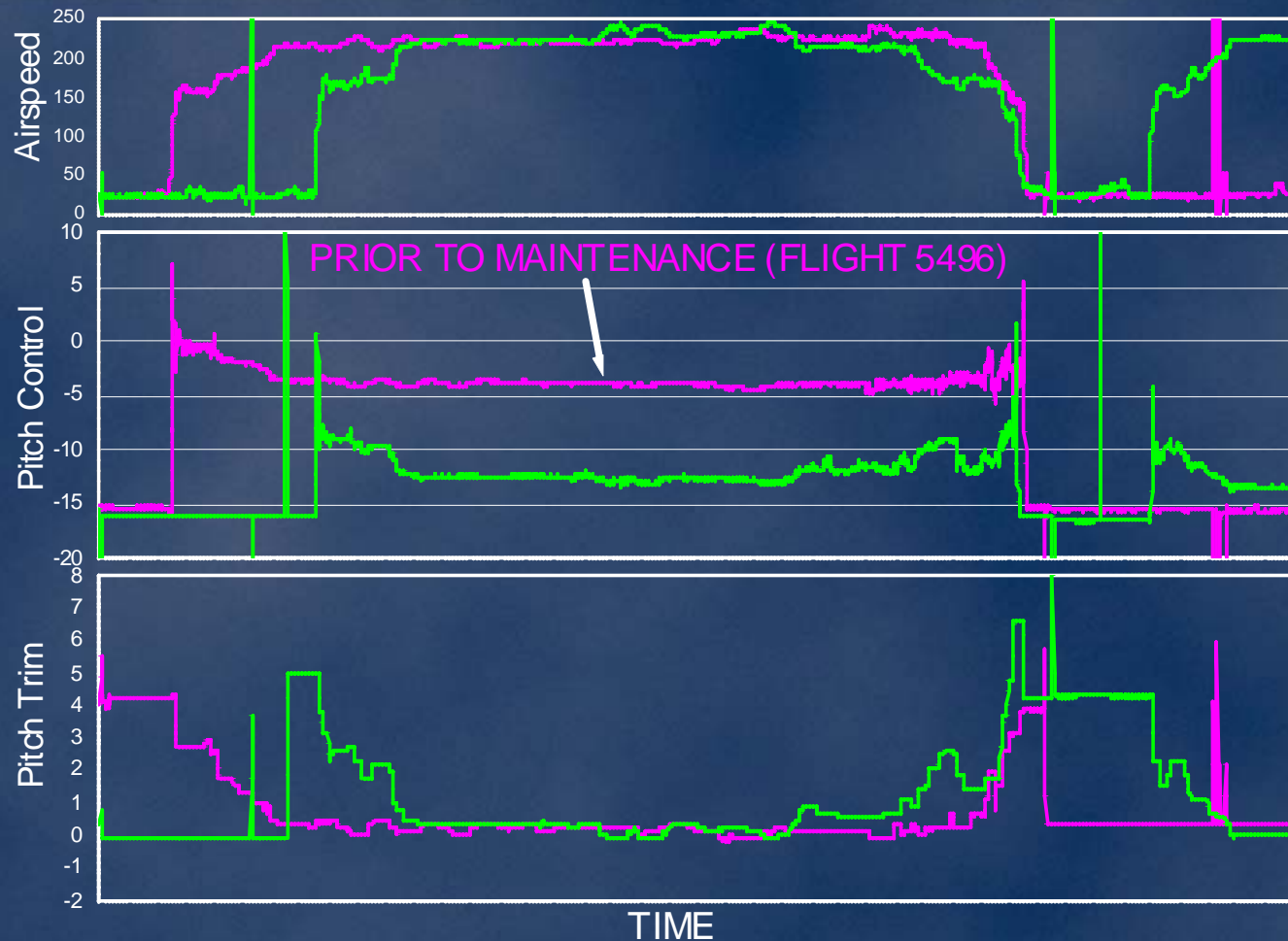
# N233YV FDR Pitch Control Data



NTSB Public Hearing  
Air Midwest Flight 5481



# N233YV FDR Pitch Control Data

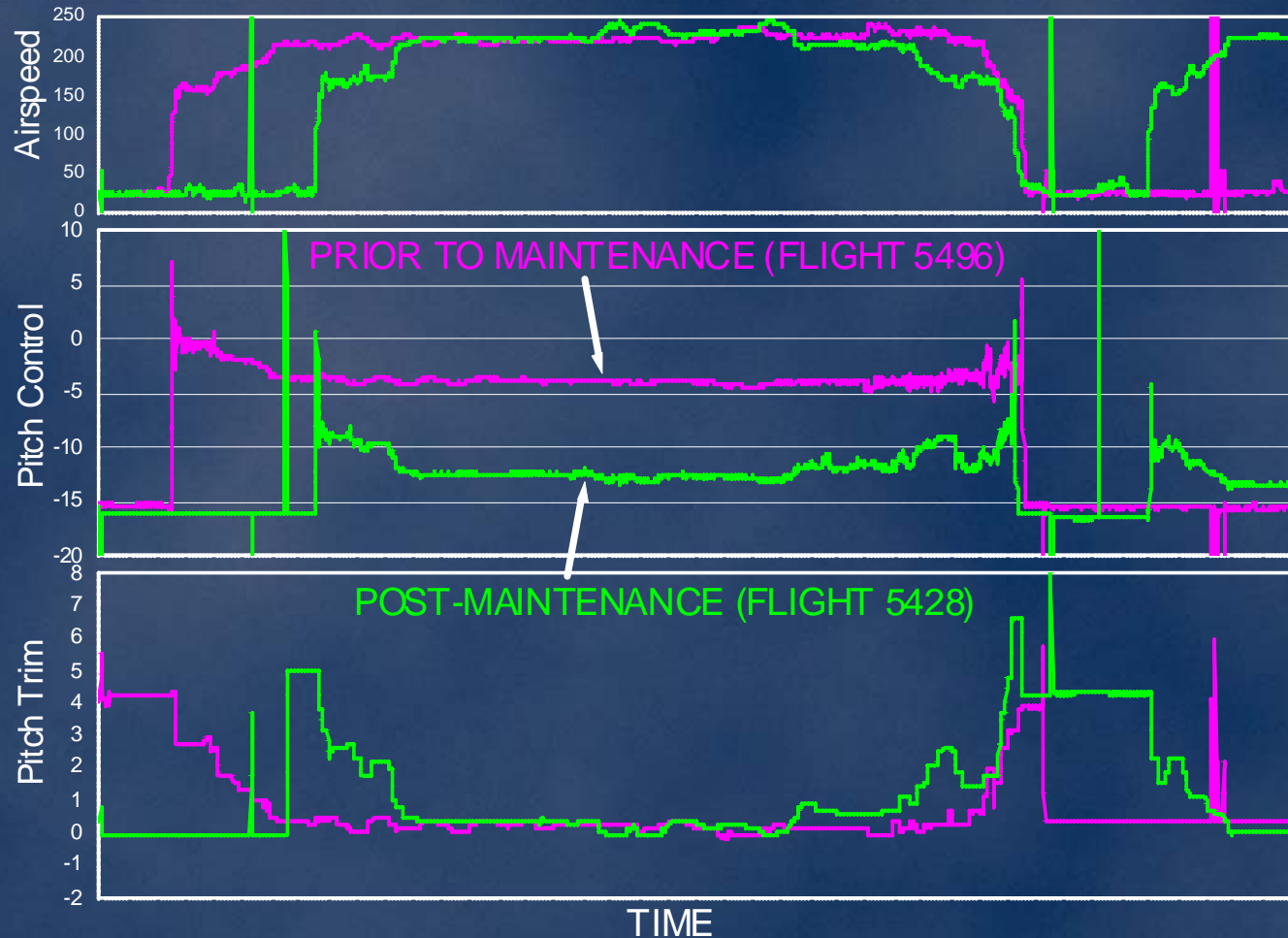


NTSB Public Hearing  
Air Midwest Flight 5481





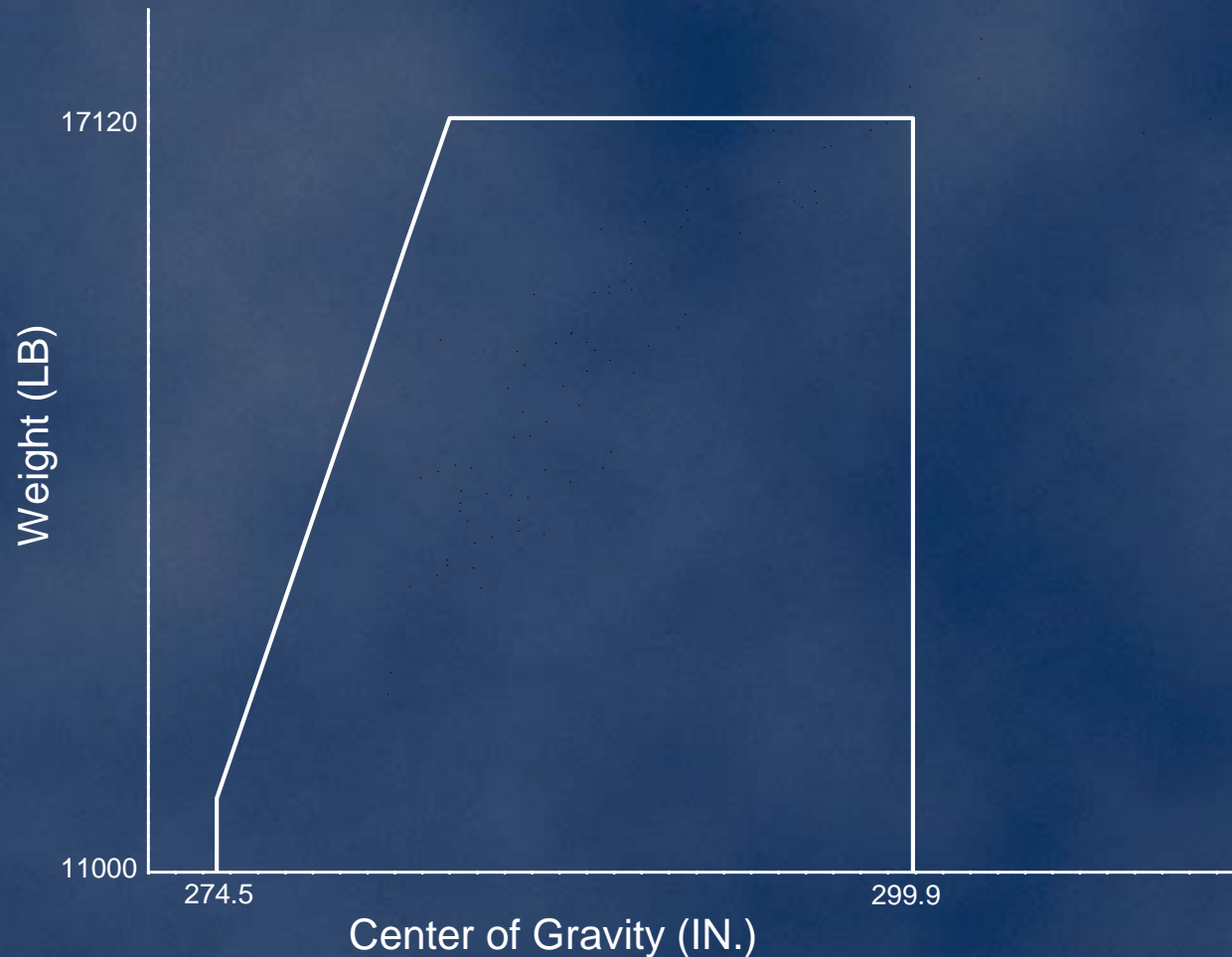
# N233YV FDR Pitch Control Data



NTSB Public Hearing  
Air Midwest Flight 5481



# Weight & CG Envelope Takeoff & Climb

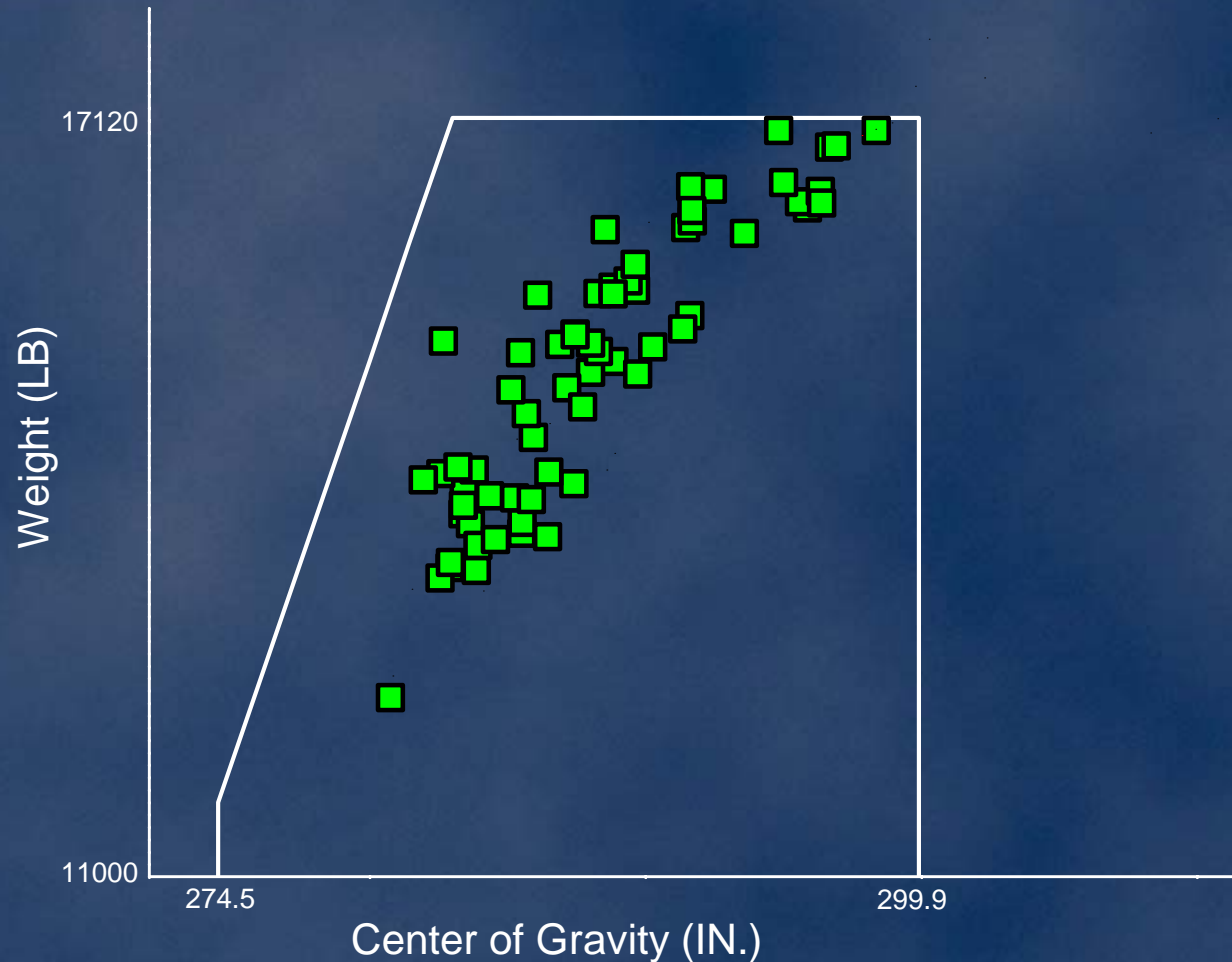


NTSB Public Hearing  
Air Midwest Flight 5481





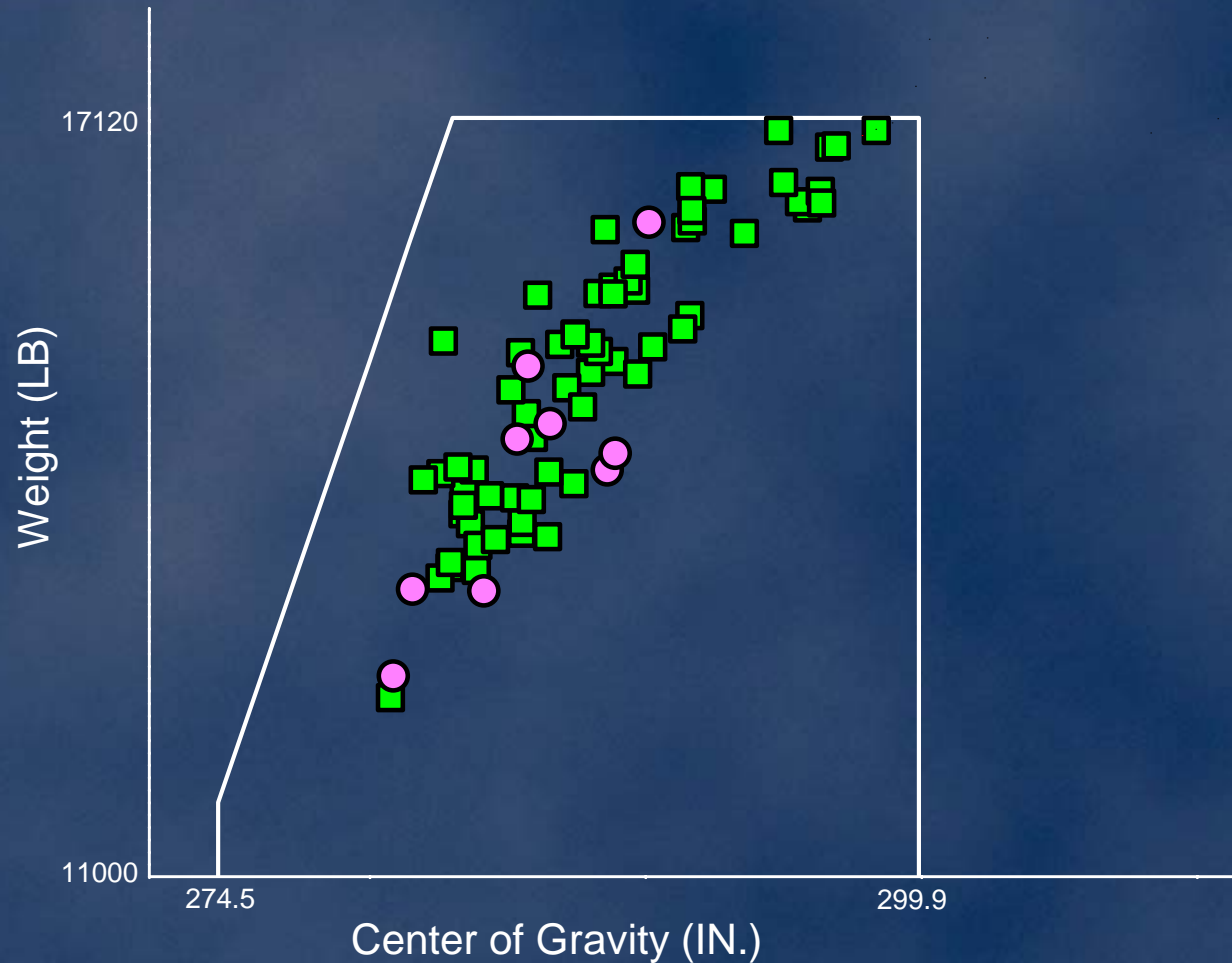
# Flights Prior to Maintenance



NTSB Public Hearing  
Air Midwest Flight 5481



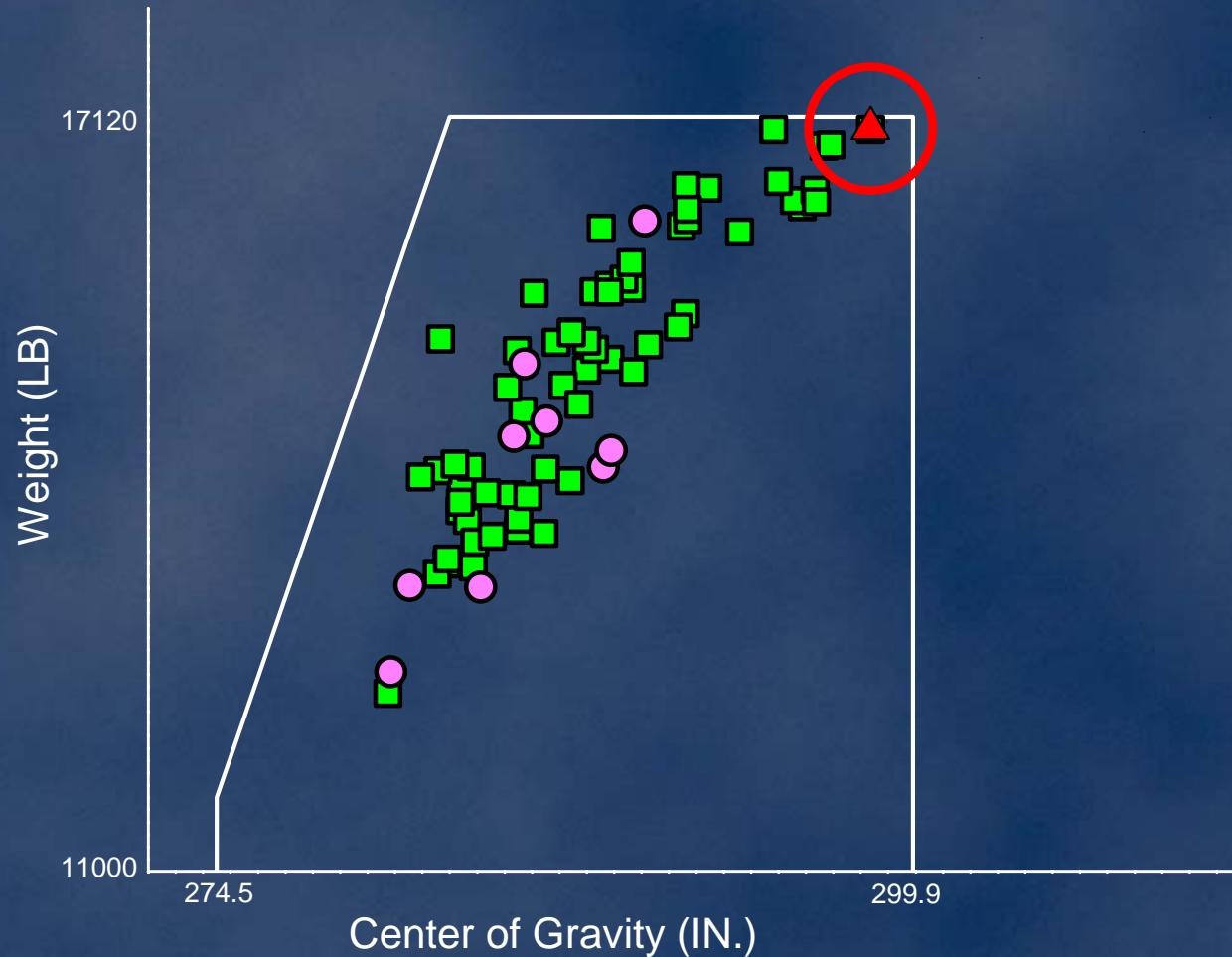
# Flights Prior to Flight 5481



NTSB Public Hearing  
Air Midwest Flight 5481



# All Flights Including Flight 5481

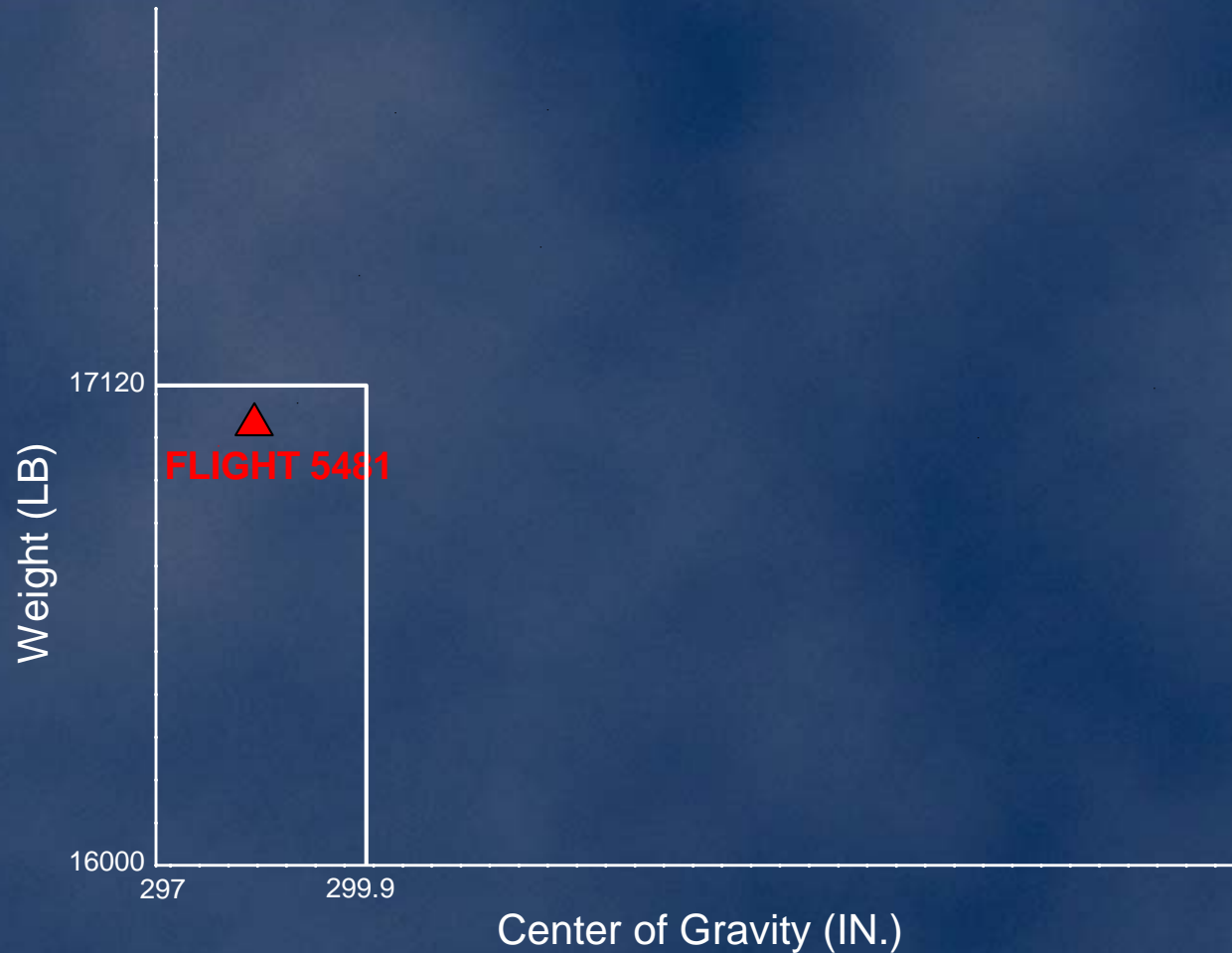


NTSB Public Hearing  
Air Midwest Flight 5481





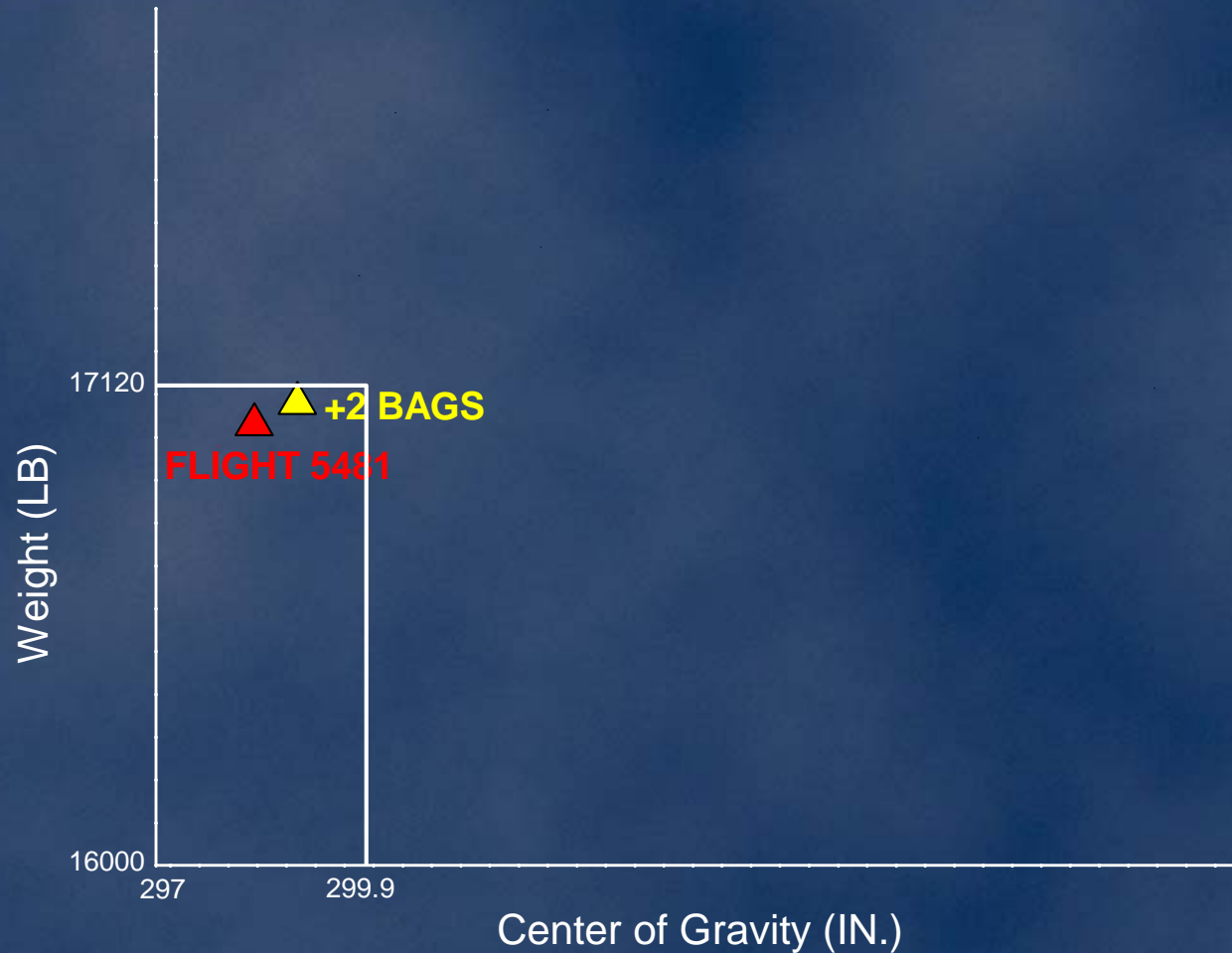
# Flight 5481 Manifest



NTSB Public Hearing  
Air Midwest Flight 5481



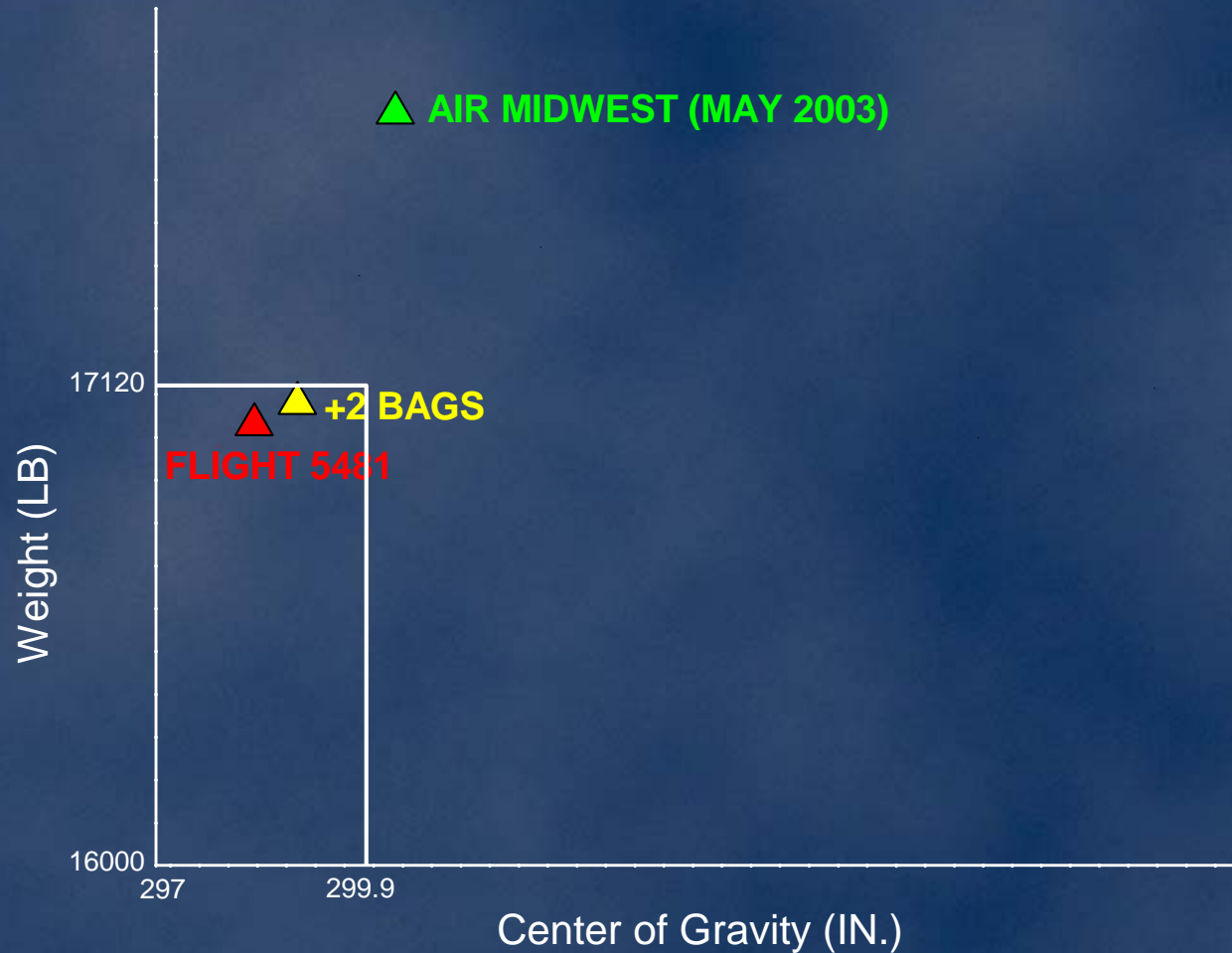
# Flight 5481 Manifest (+2 Bags)



NTSB Public Hearing  
Air Midwest Flight 5481



# Revised Air Midwest Procedure

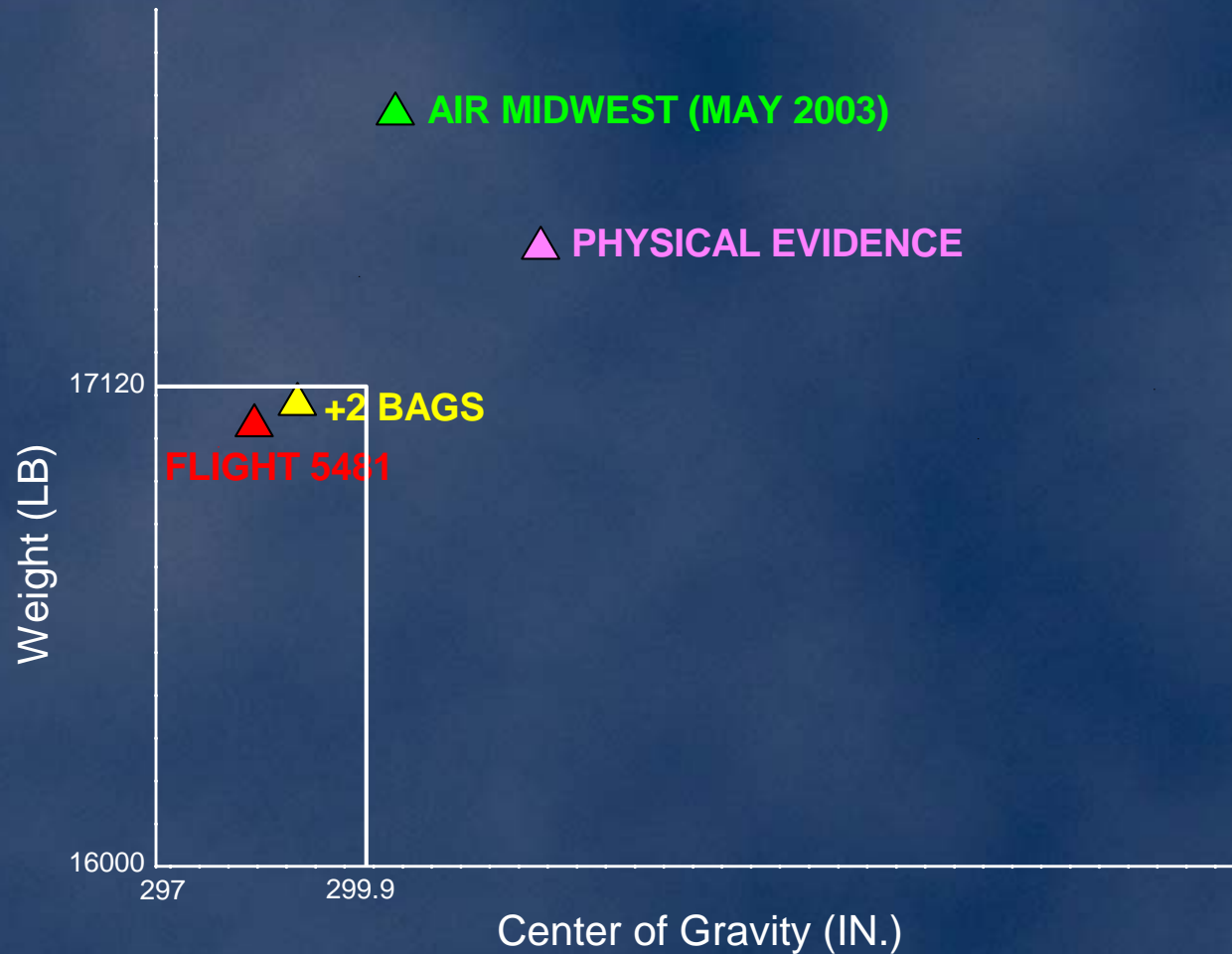


NTSB Public Hearing  
Air Midwest Flight 5481





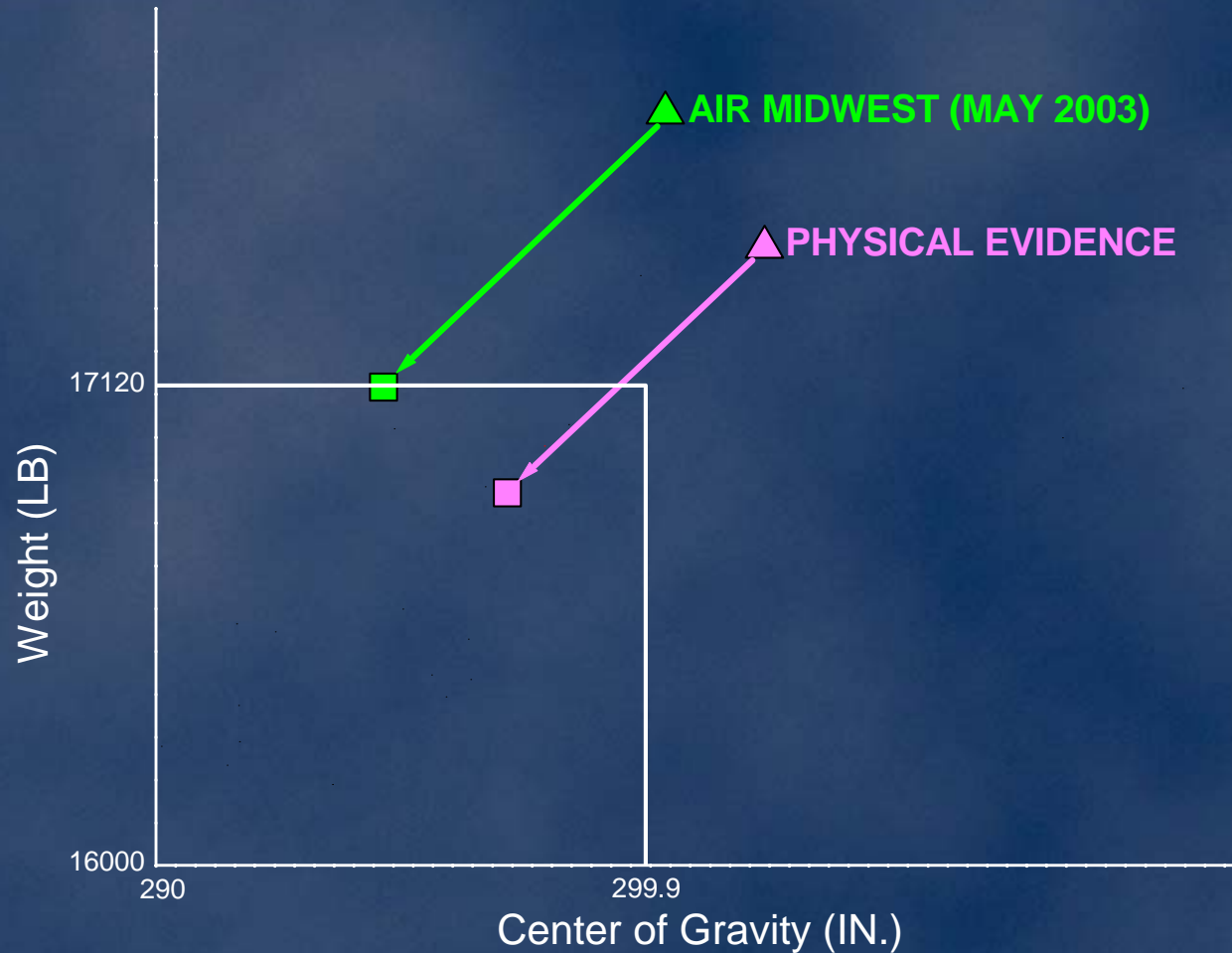
# Flight 5481 Physical Evidence



NTSB Public Hearing  
Air Midwest Flight 5481



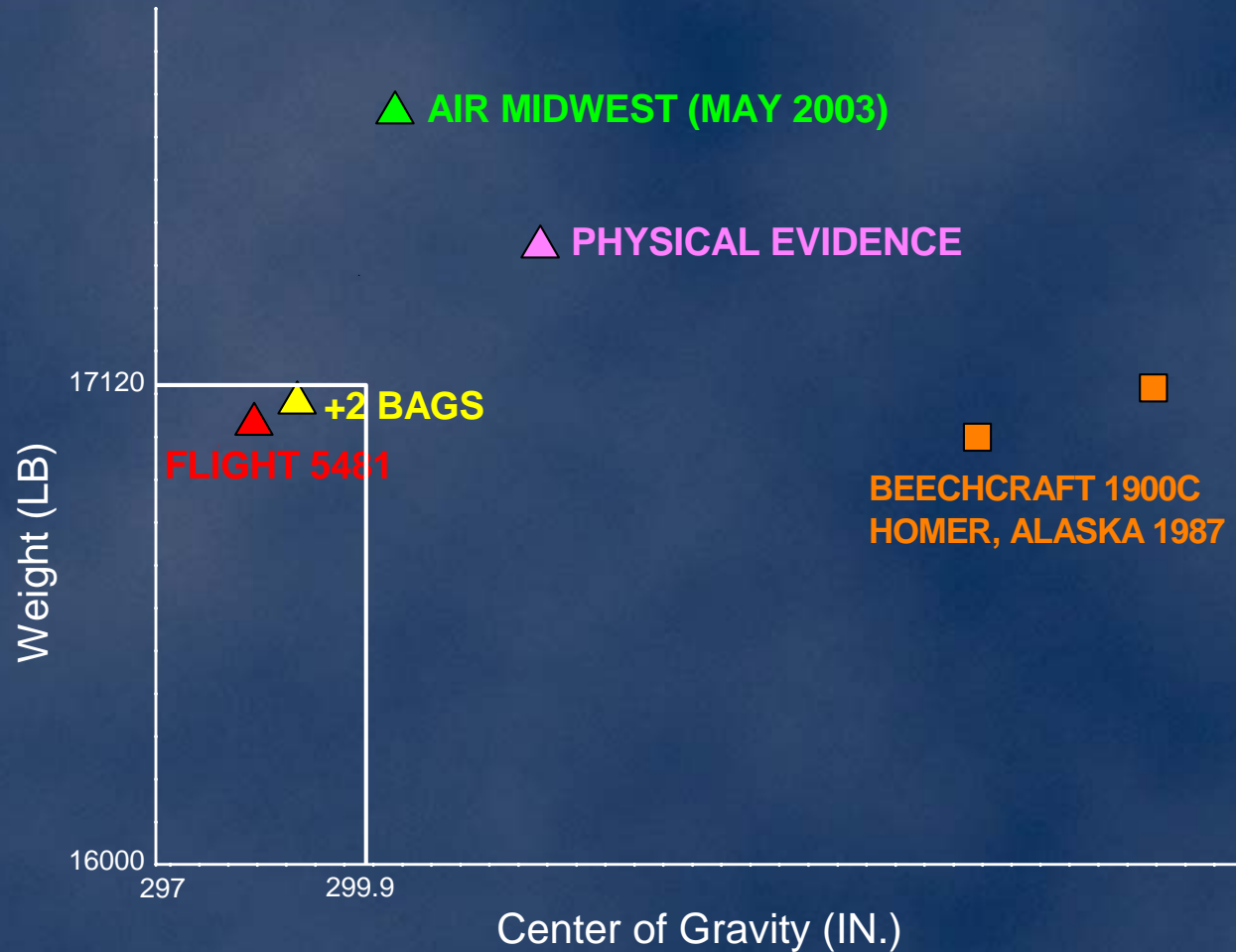
# Offloading Scenario



NTSB Public Hearing  
Air Midwest Flight 5481



# Homer, Alaska 1987



NTSB Public Hearing  
Air Midwest Flight 5481





# FAA Actions

- Weight and Balance Survey
- Airworthiness Directive on Elevator Rigging



NTSB Public Hearing  
Air Midwest Flight 5481



# NTSB Investigators

- Systems – Bob Swaim, Mike Hauf
- Structures – Deepak Joshi, Clinton Crookshanks, Eric Alleyne
- Powerplants – Pierre Scarfo
- Survival Factors – Cindy Keegan
- Airport Operations – Courtney Liedler, Nora Marshall
- ATC – Bill English



NTSB Public Hearing  
Air Midwest Flight 5481



# Investigators (cont.)

- Operations – Ken Egge, Paul Misencik, Butch Wilson
- Human Performance – Dr. Evan Byrne
- Aircraft Performance – Dr. Kevin Renze, Dr. Dan Bower
- Maintenance Records – Steve Carbone
- FDR – Erin Gormley
- CVR – Doug Brazy
- Weather – Kevin Petty



NTSB Public Hearing  
Air Midwest Flight 5481





# Parties to the Investigation

- Federal Aviation Administration
- Raytheon Aircraft
- Raytheon Aerospace, LLC
- Air Midwest
- Airline Pilots Association
- International Association of Machinists
- National Air Traffic Controllers Association
- Hartzell Propeller



NTSB Public Hearing  
Air Midwest Flight 5481



# Parties and Personnel Involved in Air Midwest Maintenance

